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The Effect of the 1961 Feed Grain Program on West-Central Ohio Farms

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THE EFFECT OF THE 1961 FEED GRAIN PROGRAM ON WEST-CENTRAL OHIO FARMS

JERRY A. SHARPLES AND J. ROBERT TOMPKIN[1]

INTRODUCTION

Since 1952 the amount of feed grains in the Commodity Credit Corporation (CCC) inventory and under CCC loan has greatly increased. On January 1, 1953, there were about 280 million bushels of corn in CCC inventory and 90 million bushels of corn under CCC loan. By January 1, 1961, the Commodity Credit Corporation owned 1,470 million bushels of corn and had loans extended to farmers on 370 million bushels. The total value of this corn (at purchase price) was 2.85 billion dollars. A longrun farm program was needed that would (1) help the farm industry adjust production to the changing patterns of consumption, (2) reduce government costs, and (3) reduce existing stocks of feed grains. However, long run programs take time to develop and a production-retarding program had to be initiated before planting time in 1961 or another year's surplus would have to be stored. The 1961 Feed Grain Program, signed by the President on March 22, 1961, was designed for that purpose.

The objectives of the program were "(1) to increase farm income, (2) to reduce the risk of serious overproduction of meat, poultry, and dairy products, (3) to stop the build-up of feed grain surplus and reduce it if possible, (4) to reduce government costs of farm programs, and (5) to assure consumers fair and stable prices for meat, poultry, and dairy products[2]."

Details of the Program[3]

The 1961 Feed Grain Program was administered nationally by the Agricultural Stabilization and Conservation Service of the U. S. Department of Agriculture, and locally by the Agricultural Stabiliza-

[1]Agricultural Economists, Farm Production Economics Division, Economic Research Service, U. S. Department of Agriculture. The authors gratefully acknowledge the cooperation of the sample County Agricultural Stabilization and Conservation offices in drawing the sample and obtaining sample information. Valuable assistance was given during the analysis by members of the Department of Agricultural Economics and Rural Sociology, The Ohio State University and Ohio Agricultural Experiment Station, and by members of the Agricultural Adjustments Branch of the Farm Production Economics Division, ERS, USDA.

[2]The 1961 Feed Grain Program, Commodity Stabilization Service, U. S. Department of Agriculture, PA 453, March 1961.

[3]Federal Register of June 15, 1961, 26 F. R. 5356.

tion and Conservation (ASCS) state and county committees. The county ASCS offices obtained individual farm acreage information for all crops raised in 1959 and 1960. A feed grain base for each farm was then computed from the arithmetic average of the corn and grain sorghum acreage raised during these 2 years. A normal conservation acreage was determined for each farm in the same manner. The ASCS county committee also established a productivity index for each farm which reflected the productivity of that farm relative to the county base average of 100.

To participate in the program the farmer must have diverted a minimum of 20 percent of his feed grain base acreage to an approved conservation practice. The maximum permitted reduction varied depending upon the size of the feed grain base, as follows: (1) With a farm base of 25 acres or less, the total feed grain base could be diverted; (2) with a base of over 25 acres but not more than 100 acres, 20 acres plus 20 percent of the base was the maximum diversion allowable; and (3) if the base was more than 100 acres, the maximum diversion was 40 percent of the base. A farmer must also have increased his normal conserving acreage by an amount at least equal to the diversion acreage.

Each farmer participating in the program would receive payment per acre at the rate of 50 percent of his normal yield per acre times the applicable corn or grain sorghum support price for the first 20 percent of the farm's base that was diverted. An additional 20 percent diversion would receive 60 percent rather than the 50 percent rate. If more than 40 percent of the base were diverted, the remainder would receive the lower rate per acre.

If a farmer participated in the program, he was permitted to raise corn and grain sorghum up to the limit of his base minus the diverted acreage. He was also eligible for price support on the normal yield. For example, a farmer who participated in the program might have diverted a certain acreage and planted the remainder of his base to corn. If his normal yield were set at 60 bushels per acre but his actual yield was 70 bushels, he would then be eligible for price support only on 60 bushels per acre.

In 1961 the national average price support rates were: corn $1.20 per bushel; grain sorghum, $1.93 per hundredweight; barley, $0.93 per bushel; oats, $0.62 per bushel; and rye, $1.02 per bushel.

No crop could be harvested and none could be grazed from the diverted land. However, crops to be harvested the following year could be planted on the diverted acreage. A producer operating sev-

eral farms was eligible for diversion payments and price support only if he did not exceed the feed grain base on any one farm.

In the early spring of 1961 the county committees notified each farmer of his feed grain base and the rates of payment per acre for diverted land. The farmer then had until June 1 to notify the county committee of his intention to participate. As soon as a producer signed up to participate, he was offered an advance payment of up to approximately 50 percent of his total payment. Final payment was made after compliance with all the provisions had been established.

On rented land the payment was to be divided among the producers in a fair and equitable manner and in keeping with the rental contract. It was the responsibility of the county ASCS committees to see that the division of payments was fair.

Participation in the Feed Grain Program

In 1960 there were 71.6 million acres of corn harvested for grain in the United States. The feed grain program was in effect in 1961 and acreage of corn for grain was reduced to 58.7 million acres. Corn yield per acre increased from 54.5 bushels in 1960 to 61.8 bushels in 1961 so that much of the effect of the acreage reduction was offset by the increase in yield. Total corn production was decreased from 3,908 million bushels to 3,624 million bushels. There were proportional reductions in grain sorghum production. In all, 25.2 million acres of land that would normally produce feed grains were diverted to conservation uses in 1961. "Feed grain production was below utilization for the first time since 1952—a direct result of the 1961 Feed Grain Program[4]."

Ohio, the eighth ranking corn-producing state in the United States placed 1 million acres in the program. This was about one-fourth of the average acreage of corn planted in 1959 and 1960. As was true with national yields, Ohio corn yields increased from 1960 to 1961 because of good weather and increased use of yield-improving methods.

PROCEDURE

Objectives

As an aid for the development of farm programs, much can be learned from past experience—and farm policymakers have a wealth of past experience from which to draw. Research carried out on farm programs can be used to find their weaknesses and strengths. This research should answer such questions as: Were the goals of the pro-

[4]Farm Programs—Where do we Stand?, U S Department of Agriculture, U S Government Printing Office, January 1962

gram consistent with the goals of society? Did the program successfully meet its goals?—How did the program affect the national product? How did the program affect individual farms and farmers? The last two questions, of primary concern to economists, help answer the first two. The objective of this study is to answer the last question. How did the 1961 Feed Grain Program affect farms and farmers in west central Ohio?

This objective is broken down into three parts. (1) What factors are associated with participation or nonparticipation in the feed grain program? (2) What changes in operation and organization were made on farms from 1960 to 1961 as a result of participation in the feed grain program? (3) How would farmers react to various alternative program proposals?

Source of Data

In December of 1961 the Farm Economics Division, Economic Research Service, U. S. Department of Agriculture, initiated a study of the 1961 Feed Grain Program. The objectives of the study were similar to those listed above. An additional objective was to estimate the number of farmers who would participate in the 1962 Feed Grain Program. The states surveyed were Iowa, Minnesota, Ohio, Kansas, and Texas. Corn was the major crop in the first three states, whereas, grain sorghum assumed that role in the latter two. Data were collected in December 1961 and January 1962, and analyzed by FED personnel in Washington. A report will be prepared on the effects of the program on the Corn Belt and grain sorghum areas as a whole.

The Ohio segment of the feed grain study was made cooperatively with the Ohio Agricultural Experiment Station.

Description of Sample Area

This report is based upon data collected in Champaign, Clark, Darke, Madison, and Miami counties. The 5-county sample area, located between Columbus and the Indiana state line (Figure 1), was selected as representative of the eastern segment of the Corn Belt. In 1959 the sample area contained 7 percent of Ohio's total farmland but 11 percent of the total corn acreage. About 44 percent of the cropland was planted to corn. The soils are predominantly gently rolling Miami brown silt loam, and clay loam soil. Rainfall averages about 38 inches a year.

The most numerous farm types are dairy, hog, fat cattle, cash grain, and general livestock. Cash receipts from the sale of farm products in these 5 counties totaled 90 million dollars in 1960, with 18

Fig. 1.—State of Ohio showing sample counties.

percent coming from the sale of hogs, 18 percent from dairy, 13 percent from corn, 12 percent from cattle, 10 percent from wheat, 10 percent from poultry, 7 percent from soybeans, and 12 percent from other sources (including 1.3 percent from government payments)[5].

Sampling Procedure

In each county a random sample of 15 farms (operator units)[6] was drawn from the county (ASCS) office records of all farms that participated in the feed grain program. A random sample of 15 farms was also drawn from the ASCS records of all farms that had a corn base but did not participate in the program. The complete sample for the 5-counties contained 75 participants and 75 non-participants. Information pertaining to 1959 and 1960 crop acreages, participation in Agricultural Conservation Payments program, productivity rating indexes, crops sealed by the Commodity Credit Corporation, and past participation in the Conservation Reserve or Acreage Reserve programs were taken from county ASCS records. Other information was obtained by personal interview with the sample farmers during the last 2 weeks in December 1961.

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[5]M. G. Smith and others. Ohio Farm Income, 1960, Department Series A. E. 325, Columbus, Ohio, October 1961.

[6]In this report the term "farm" means the land operated by one farmer. This is consistant with the definition of "farm" as given in the 1959 Census of Agriculture. The county ASCS statistics are based upon a definition of "farm" that differs substantially from that of the census. For example, the 1959 Census lists 7, 574 farms raising corn in the 5-county sample area, whereas the ASCS statistics lists 11,908 farms as having a corn base. (The corn base is the average acreage of corn raised on a farm in 1959 and 1960). The discrepancy is caused by the difference in definition of "farm". An ASCS "farm" is defined as a contiguous area of land under the ownership of one legal individual. Thus a one-operator unit could contain several (in some cases over six) ASCS "farms". The sample contained an average of about 1.5 ASCS "farms" per operator unit or census farm.

TABLE 1.—Distribution of Corn-Raising Farmers in the 5-County Area, by Counties, and by Participation in the 1961 Feed Grain Program.

County	Participants	Nonparticipants
	Percent	Percent
Champaign	10.6	7.0
Clark	8.4	6.5
Darke	15.0	22.4
Madison	4.6	5.2
Miami	8.5	11.8
Total	47.1	52.9

Source: Table Appendix A-2

Equal numbers of participants and nonparticipants were drawn from each county but the number and proportion of farms participating in the program varied from county to county. To more accurately describe the population, the sample results were adjusted using the weights based upon the percentages shown in Table 1.

FACTORS ASSOCIATED WITH PARTICIPATION

Participants in the 1961 Feed Grain Program were compared with nonparticipants to see if the two groups differed significantly in association with each of various factors. Variables tested for association with participation were divided into the following areas: (1) land resource; (2) organization of farms; (3) tenure; (4) labor supply; and (5) farm operator.

The Land Resource

Farmers who participated in the 1961 Feed Grain Program operated larger farms, on the average, than those who did not participate. The weighted mean size of the participating farms was 204 acres compared with 137 acres for nonparticipating farms. The average size of all farms in the sample was 169 acres. (See Table 2). The difference in size of farm between the two groups was statistically significant at the 0.01 level of probability.

TABLE 2.—Percent of Participant Farms, Nonparticipant Farms, and All Farms by Size, 1961.*

Size of farm in acres	Participants		Nonparticipants		All farms	
	Percent	Accumulative Percent	Percent	Accumulative Percent	Percent	Accumulative Percent
Under 10	0.0	0.0	6.7	6.7	3.5	3.5
10 - 49	10.7	10.7	18.0	24.7	14.5	18.0
50 - 69	11.8	22.5	5.2	29.9	8.3	26.3
70 - 99	13.3	35.8	21.5	51.4	17.7	44.0
100 - 139	13.8	49.6	10.9	62.3	12.2	56.2
140 - 179	11.9	61.5	15.5	77.8	13.8	70.0
180 - 219	8.5	70.0	3.6	81.4	5.9	75.9
220 - 259	5.5	75.5	5.8	87.2	5.7	81.6
260 - 499	16.0	91.5	9.8	97.0	12.8	94.4
500 - 999	7.9	99.4	3.0	100.0	5.3	99.7
1,000 & over	0.6	100.0	0.0	100.0	0.3	100.0
Average size (acres)	204.0	----	137.0	----	169.0	----

* Weighted. See **Tables 1 and A-2.**

The average quality of land in farms in the two groups appeared to be comparable. Although some evidence indicates that productivity indexes tended to cluster nearer the average then the range in quality of land would justify, this did not appear to be a factor affecting farmers' decisions regarding participation. The lowest index for any farm in the sample was 64 and the highest was 130. Stated in corn yields per acre, the range was 43 bushels to 81 bushels. Less than 5 percent of the farms had yields outside a range of 49 to 81 bushels. The average corn yield for the 5 counties was 68 bushels per acre.

In another study of farms in the same general area of the state, the average 1958-1959 corn yield was 67 bushels per acre, but 30 percent of the farms had yields below 49 or over 81 bushels per acre[7]. Thus, farms with histories of low yields received relatively high productivity ratings and farms with histories of high yields received relatively low productivity ratings. Payments per acre based upon these kinds of productivity indexes would be expected to attract more of the poorer land into the program and less of the more productive land. Investigations showed that the average productivity index of participating farms was 100.5 and of nonparticipating farms 98.7; this difference was not statistically significant. Actual corn yields in 1961 also were very similar.

The second method used to measure quality of land was the percentage of farmland in crops. Seventy-nine percent of the acreage of the participant farms and 78 percent of that of the nonparticipant farms were planted to crops in 1960. This also indicates that the quality of the land did not differ.

Organization of Farms

There were 29 percent more animal units of livestock on participant farms than on nonparticipant farms during the year preceding the feed grain program. This difference was not statistically significant, however, because a very large poultry farm and several large beef feeder and hog farms participated in the program, greatly increasing the variance[8]. Table 3 shows the extent to which the participant farmers varied in amount of livestock production per farm.

There was an average of 161 acres of cropland on participant farms and 107 acres on nonparticipant farms. Table 4 shows that both groups of farms had about the same percentage of their cropland

[7]Unpublilshed data from a west-central Ohio adjustments study, J. R. Tompkin and J. A. Sharples, Farm Production Economics Division, Economic Research Service, U. S. Department of Agriculture, and Ohio Agricultural Experiment Station.

[8]Also, this the only one of the 6 Corn Belt areas included in the more comprehensive study where the number of livestock on farms of participants was larger than on farms of nonparticipants.

TABLE 3.—Animal Units of Livestock on Participant and Nonparticipant Farms, West-Central Ohio, 1960 Feeding Year.

Animal units of livestock	Participant farms	Nonparticipant farms
	Percent*	Percent*
0 to 4.9	31.1	21.8
5 to 29.9	29.2	54.9
30 to 99.9	33.5	21.1
100 and up	6.2	2.2
Total	100.0	100.0

* Weighted. See Tables 1 and A-2.

in corn and in wheat during the 2 years preceding the feed grain program, but participating farmers put a greater percentage of their cropland in soybeans and a smaller percentage in oats, hay, and pasture than did the nonparticipants. Farmers who were in the feed grain program in 1961 had cropped their land more intensively in 1959 and and 1960 than did nonparticipants, inasmuch as row crops (corn and soybeans) were planted on 53 percent and 46 percent, respectively, of the cropland.

Farmers who decided to divert corn ground into the feed grain program generally could do so without buying additional corn or reducing their livestock numbers. During the 1960 feeding year participants operated larger farms and raised more livestock per farm than did nonparticipants but their farms were less intensively stocked. The former group averaged 0.6 animal units per acre of feed grain base and the latter group averaged 0.9 animal units per acre of feed grain base. It was also found that participants sold an average of 1,900 bushels of 1960-crop corn per farm compared to 1,000 bushels sold per nonparticipant farm[9]. If 70-bushel yields were expected, then up to

[9]When figuring amounts sold, purchased corn was calculated as a negative amount sold.

TABLE 4.—Mean Acreage of Various Crops on Participant and Nonparticipant Farms, West-Central Ohio, Average of 1959-1960, and 1961.

Crops	Participants				Nonparticipants			
	1959-1960		1961		1959-1960		1961	
	Acreage per farm 1/	Total cropland	Acreage per farm 1/	Total cropland	Acreage per farm 1/	Total cropland	Acreage per farm 1/	Total cropland
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Corn	63	39	33	21	39	37	40	37
Diverted land	0	0	26	16	0	0	0	0
Soybeans	22	14	24	15	10	9	14	13
Oats	11	7	5	3	11	10	6	6
Wheat	18	11	21	13	12	11	14	13
Hay and pasture	38	24	43	27	31	29	28	26
Other 2/	9	5	9	5	4	4	5	5
Total	161	100	161	100	107	100	107	100

1/ Weighted. See Tables 1 and A-2.

2/ Includes cropland in the Conservation Reserve.

TABLE 5.—Tenure of Operator and Size of Farm by Tenure Groups, Participant and Nonparticipant Farms, West-Central Ohio, 1961.*

Item	Unit	Participant farms	Nonparticipant farms
Tenure of operator			
Full owners-----	Percent	45	49
Part owners-----	Percent	31	14
Tenants---------	Percent	24	37
All Farms-------	Percent	100	100
Average size of farm			
Full owners-----	Acres	149	78
Part owners-----	Acres	273	246
Tenants---------	Acres	228	174
All Farms-------	Acres	204	137

* Weighted. See Tables 1 and A-2.

27 acres (1,900 ÷ 70) of corn ground could have been diverted in 1961 by the average participating farmer without causing him to change his livestock program. Twenty-six acres per farm were actually diverted in 1961. The nonparticipating farmer could only divert 14 acres with the same livestock inventory.

Tenure

Theoretically, participation in the feed grain program should be advantageous to the renter. Fixed costs are generally paid by the landlord and would not change if the farm were put into the program, but variable costs which are paid by the operator, would decrease. The landlord could compensate for this changing cost structure by altering the rental agreement. However, leasing arrangements for 1961 had been completed before farmers knew the details of the feed grain program. The sample indicates that less than one percent of the rental agreements were changed between 1960 and 1961. Under these conditions one would expect to find a greater percentage of part owners and tenants in the participant group than in the nonparticipant group. But this was not found to be true. About the same percentage of operators in both groups rented land. (See Table 5). Thus, it is possible that the landlords' objection to participation without changes in leases prohibited some tenants from participation.

Part owners (operators who owned farmland and also rented land from others) apparently found the feed grain program more favorable

TABLE 6.—Percent of Operators That Are Part-Time Farmers and Size of Part-Time and Full-Time Operators Farms, West-Central Ohio, 1961.*

Item	Unit	Participators	Nonparticipators
Part-time farmers**	Percent	51	51
Full-time farmers	Percent	49	49
Average size of farm:			
Part-time farmers	Acres	131	95
Full-time farmers	Acres	269	163

* Weighted. See Tables 1 and A-2.

** Farmers who work off the farm 100 days or more were classified as part-time farmers. If they worked off the farm less than 100 days they were classified as full-time farmers.

than did full tenants. It was found previously that farms in the program were generally larger than farms not in the program. Table 5 shows that part owners operated larger farms, on the average, than did tenants.

The crop-share contract was the principal rental agreement. There was some indication that the cash rent agreement was less prevalent on participant farms than on nonparticipant farms since 12 percent of the former and 20 percent of the latter operators rented land under a cash rent contract, but the difference was tested and found to be not significant.

Labor Supply

The family provided the main source of labor on nearly all of the 150 sample farms. About 60 percent of the farms in both groups hired labor in 1960 but participants hired an average of $890 of labor per farm compared with $340 for nonparticipant farms. The labor costs exceeded $1,000 on 18 percent of the participant farms and on only 4 percent of the nonparticipant farms. Thus, the total labor supply on the remaining 82 percent of the participant farms consisted of the family plus seasonal hired labor—about the same labor supply as was found on the nonparticipant farms

The feed grain program did not seem to attract part-time operators more than it did full-time farmers. Table 6 shows that 51 percent of the operators, both in and out of the program, worked off the farm 100 days or more during 1961. The part-time farmers who were in the program operated larger farms than did the part-time nonpartici-

pants, but the difference in size was not statistically significant and was mostly attributable to one large part-time participant operator. The greatest difference in size of farms between the two groups was found among the full-time farmers.

The Farm Operator

It was found that the age of the operator had no apparent affect upon participation. Operators of farms in the feed grain program averaged 48 years of age and operators who were not in the program averaged 51 years of age, but the difference was not statistically significant. Both groups had about the same number of years of farming experience.

It was hypothesized that farm operators who had voluntarily participated in recent government programs would have a greater probability of participating in the feed grain program. To test this hypothesis, farmers were asked if they had participated in the Conservation Reserve and Acreage Reserve. They also were asked if they had received any government cost-sharing payments since 1959. The sample gave a weak indication that the hypothesis was correct in that 38 percent of the participant operators and 28 percent of the nonparticipant operators reported recent experience with other government programs. Chi-square tests indicated this difference to be significant at the 7 percent level.

All 75 participant farm operators in the sample were asked to give reasons why they had participated in the 1961 Feed Grain Program. The major reasons and the percentage of participating operators[10] who gave those reasons were: (1) it helped alleviate a labor shortage, 45 percent; (2) it reduced risk, insured a profit, 33 percent; (3) it was more profitable than raising corn, 27 percent· (4) operator wanted to "help agriculture," 17 percent; (5) participation would help build up the soil, 14 percent; and (6) operator did not need the grain, 10 percent.

All 75 sample farm operators who had not been in the 1961 Feed Grain Program were asked why they had not participated. The major reasons and the percentages of the nonparticipating operators[11] who gave those reasons were: (1) operator needed the feed, 39 percent; (2) because of a small corn base, participation was more trouble than it was worth, 21 percent; (3) it was more profitable to raise corn, 18 percent; (4) the operator was against government programs, 16 percent; and (5) lack of knowledge about the program, 13 percent.

[10]Many operators gave more than one reason.

[11]Ibid.

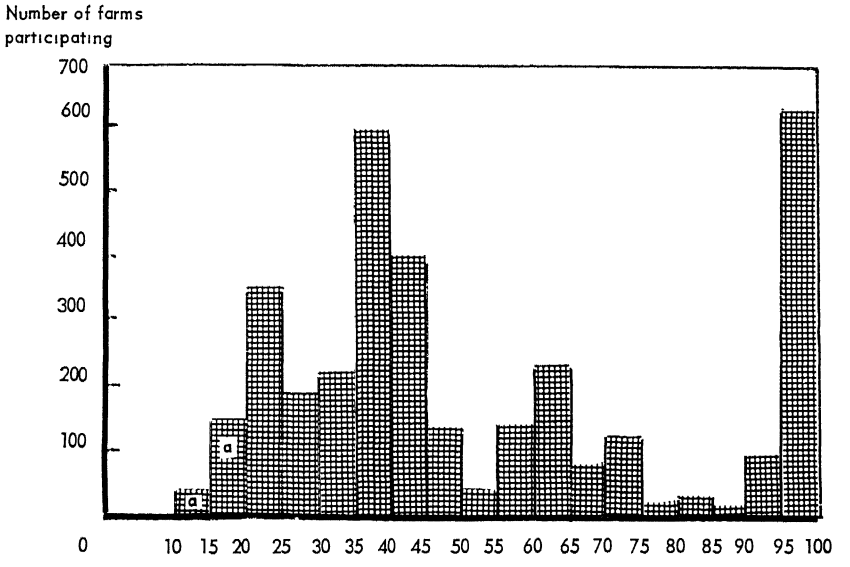
EFFECT OF THE 1961 FEED GRAIN PROGRAM ON ORGANIZATION OF PARTICIPANT FARMS

Cropping Program Adjustments

From 1960 to 1961, farmers who participated in the feed grain program made changes in the organization of their farms. Of course, the most apparent adjustment was the reduction of corn acreage. The percentage of the corn base that was diverted per farm is shown in Figure 2. Most farmers diverted either the minimum (20 percent) or the maximum corn base acreage to conservation uses. Farmers with less than a 25-acre base could divert 100 percent of their base but the maximum diversion for farmers with a base of 100 acres or more was 40 percent. This explains the peaks in Figure 2 at 20 to 25, 35 to 40, and 95 to 100 percent.

Seventeen percent of the participators diverted the minimum allowable corn acreage into the program. The main reasons given by operators for diverting the minimum acreage were (a) they needed the

Fig. 2.—Number of participating farmers by percentage of corn base diverted per farm, 5-counties, West-Central Ohio, 1961.



[a] Some farm units are made up of several tracts of land. Each tract may have its own corn base, thus the operator can divert 20 percent of the corn base on one tract and divert none of the corn base on the other tract to give a total diversion of less than 20 percent for the entire farm

Source: Expansion of sample.

remainder of the corn for feed; (b) they wanted price supports—otherwise the payments per acre were too low; or (c) they had the remainder of the corn base acreage planted to corn before they had signed up.

The other 83 percent of the participating farmers were asked why they diverted more than the minimum allowable corn acreage. They generally gave the same answers as were given to the question, "Why did you participate in the program?" but 23 percent said that they diverted more than the minimum because of their field sizes. They would divert a whole field so that the rotation would not be disturbed.

Farmers generally followed one of three practices on the diverted land. (1) Thirty-six percent of the diverted land was left in summer fallow and planted to wheat in the autumn, (2) twenty percent of the diverted land was in a cover crop which was established the previous year so the operator only needed to keep it clipped during 1961, (3) a cover crop was established on 44 percent of the diverted land in 1961. There was practically no cost of maintenance for farmers that followed the first practice. It also allowed more time for the preparation of a seed bed for wheat. The cost of mowing was the only diversion expense for farmers using the second practice. The land would probably be plowed for corn the following spring. The third practice was the most expensive because the cover crop needed to be seeded and maintained.

Since participating farmers were paid at a uniform rate per acre on all acres on a farm and were permitted the choice of land to be retired, it seemed reasonable to expect them to divert their poorer cropland and raise crops on their better land. To test this, operators were asked to make an estimate of the yield of corn that they would have expected in 1961 on the diverted acres if they had used the same practices as on the land planted to corn in 1961. Participants expected that corn yields on the diverted land would have averaged 2.9 bushels per acre less than their actual corn yield. When tested by group comparison techniques, this was found to be statistically nonsignificant.

Farm operators in the 1961 Feed Grain Program decreased their corn acreage about 4 acres more than was necessary to meet the diverted acreage. They also increased the number of acres planted to hay and pasture. (See Table 4). Apparently the operators wanted to be certain they were within the limits of allowable corn acreage and required conservation acreage per farm. They also made large reductions in their oat acreage. Oats, a minimum profit crop, followed corn in the rotation on many farms, but much of the 1960 corn ground was left idle and diverted into the feed grain program in 1961 rather than being planted to oats.

Farms that eventually were in the 1961 Feed Grain Program were cropped more intensively in 1959 and 1960 than were other farms, inasmuch as corn and soybeans constituted 53 percent of cropland use as compared with only 46 percent on the other sample farms. However, in 1961 those not in the program increased their soybean acreage so that 50 percent of their cropland was planted to the two crops. Prior to the 1961 planting the price of soybeans was over $3.00 a bushel and it had been announced that the 1961 price support for soybeans would be $2.30 a bushel. Thus, soybeans seemed most likely to be the second most profitable crop (after corn) to raise that year. Farmers not participating in the feed grain program responded by increasing their soybean acreage 40 percent over their 1959 and 1960 acreage. To do this, they reduced the number of acres planted to oats, hay, and pasture. However, farmers who participated in the program had to maintain their conservation base and having increased their wheat acreage the previous autumn, the only crop they could logically reduce was their normally small acreage of oats. Thus, there was little opportunity to increase soybean acreage.

Livestock Program Adjustments

From 1960 to 1961, farmers who were not in the feed grain program generally reduced their livestock numbers. Participators decreased the number of cattle on feed (but not as much as did the nonparticipators) but increased their hog and dairy enterprises. (See Table 7). Of those participants with more than 4 animal units of livestock, 40 percent increased their livestock numbers in 1961 and only 13 percent reduced their livestock numbers. Comparable figures for nonparticipants were 28 and 34 percent, respectively.

It seems paradoxical that participating farmers would increase their livestock after having reduced their home-raised feed supply,

TABLE 7.—Livestock Raised on Participant and Nonparticipant Sample Farms, 1960 and 1961 Feeding Years.

Kind of Livestock	Participants			Nonparticipants		
	Feeding year beginning Oct. 1		Percentage change	Feeding year beginning Oct. 1		Percentage change
	1960	1961		1960	1961	
	Number	Number	Percent	Number	Number	Percent
Cattle on feed----	499	426	-15	691	554	-20
Hogs fattened-----	5964	7685	29	5239	4541	-13
Dairy cows--------	723	901	25	380	361	- 5

especially at a time when other farmers were decreasing their livestock numbers. Apparently, the diversion of corn ground released labor that could be used to increase the livestock enterprises[12]. This was substantiated by several observations.

First, 45 percent of the participating farmers said they participated to help alleviate a labor shortage on their farm; and second, Table 2 shows that, when compared with nonparticipants, a greater percentage of the participants had less than 5 animal units of livestock and also a greater percentage had more than 30 animal units of livestock, during the 1960 feeding year. Further examination revealed that 82 percent of those participants with less than 5 animal units of livestock worked off the farm 100 or more days during 1960. Thus, the typical participating farmer was either a part-time farmer with very little livestock and about 130 acres of land, or a full-time farmer with over 30 animal units of livestock and 270 acres of land. In either case, the family's farm labor would probably be fully utilized. It was previously found that even though nonparticipants generally operated considerably smaller farms with less livestock, their labor supply was not much less than on participant farms. Therefore, it would appear that farmers who participated in the feed grain program had more of a labor shortage than other farmers during the year prior to the program. It was also found that participators sold considerably more of their 1960-crop, corn, and as was previously mentioned, had less animal units of livestock per base acre than did the nonparticipating farms. Farmers generally assumed that corn marketed through livestock was more profitable than corn sold as grain. Participating farmers could divert corn ground and profitably transfer labor from corn to livestock because they would not need to purchase as much corn as the nonparticipating operators.

Other Adjustments

Farmers were asked if they used for the first time, or increased the use of, any yield-improving practices in 1961[13]. Fifty-seven percent of the nonparticipants and 62 percent of the participants answered affirmatively. Thus, yield-improving practices were used about as extensively by one group as by the other. Twenty-five percent of the participators and 34 percent of the nonparticipators increased their corn seeding rate, and 33 percent and 20 percent, respectively, increased

[12]Participation also would have provided the operator with advanced payments that could be invested in livestock. This would permit some operators who were reluctant to borrow money, to invest in livestock. Unfortunately, this was not pursued in the interview

[13]Yield-improving practices included increased seeding rate per acre, increased fertilizer application, improved drainage, weed spray, insect control, and others.

TABLE 8.—Fertilizer Used on Corn by Participants and Nonparticipants, West-Central Ohio, 1960 and 1961.

Plant Food	Participants		Nonparticipants	
	1960	1961	1960	1961
	Lbs./Acre	Lbs./Acre	Lbs./Acre	Lbs./Acre
Nitrogen (N)	30	43	35	42
Phosphorus (P_2O_5)	50	56	41	52
Potassium (K_2O)	38	41	44	46
Total	118	140	120	140

the total poundage of nutrients applied to corn. The average application of nutrients is shown in Table 8.

Participation in the feed grain program enabled some farmers to postpone the purchase of a major piece of farm machinery. Eight percent of the participants interviewed said that they had done this. The actual percentage probably is higher inasmuch as some farmers would not have made the decision to buy a machine until it was needed. Since the participants were reducing their corn acreage, they might not have felt the need for a new machine at that time and consequently reported negatively.

Farmers' Reactions After Being in Feed Grain Program

The participating operators were asked if they would participate in a similar feed grain program in 1962. Twenty-nine percent said that they did not plan to participate the following year. These farmers gave one of the following reasons: (1) forty-eight percent thought that it was more profitable to raise corn (1961 was an exceptionally good corn year in West-Central Ohio); (2) 30 percent said that there was too much confusion and government "red tape" involved; and (3) 17 percent needed more feed because of increases in livestock numbers.

Farmers who planned to participate in 1962 were asked if they expected to divert the same land. About a third said that they would, and half thought that other land would be diverted. The remainder did not know at the time of the interview. Many farmers planted their diverted land to small grain and then planned to divert other ground in 1962 to keep the rotation in order.

Many farmers in the sample participated in the 1961 Feed Grain Program because they thought that it was more profitable than non-participation, but others thought that participation was not profitable.

FARMER'S REACTIONS TO ALTERNATIVE PROGRAM PROPOSALS

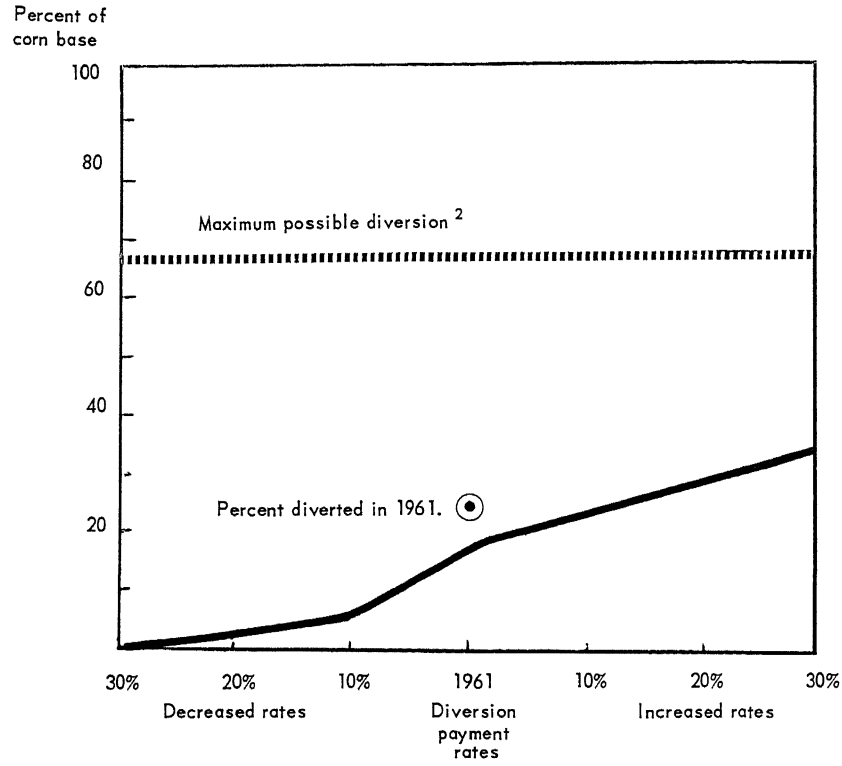
The sample farmers who did not plan to participate in the 1962 Feed Grain Program were asked if they would participate if various changes were made in the program. The farmers had the following changes to consider: (1) higher payments for diverted land, (2) raise corn support prices from $1.20 to $1.35 per bushel; (3) lower the minimum acres to be diverted from 20 to 15 percent; (4) allow farmers to pasture the diverted land; (5) allow only farmers that participate in the feed grain program to have a supported price for soybeans; and (6) substitute (for the 1-year program) a long-term program with the option of signing up each year. The first two alternatives would increase the cost and effectiveness of the program. Alternatives 3 and 4 would attract more farmers into the program, but their effectiveness in reducing feed production would be doubtful. Alternatives 5 and 6 probably would raise the effectiveness of the program at lower cost.

In 1961, 25 percent of the corn base in the project area was diverted into the feed grain program. Farmers' plans to participate in 1962, however, indicate that diversion will include only 17.5 percent of the corn base in 1962[14]. Half of those farmers not planning to be in the 1962 program said that they would participate if the payments were increased. Figure 3 shows the effect increased (and decreased) payments would have on the acreage of corn ground that farmers said they would divert in 1962. It shows that there would probably be a very sharp decrease in participation if the payment rates per acre were decreased by 10 percent. If rates were increased, the farmers as a group indicated that they would divert about 6 percent more of the total corn base for each 10 percent increase in payment rates per acre (based upon the 1961 payment rates).

Almost a fifth of the farmers who did not plan to participate in the 1962 Feed Grain Program said they would do so if the price support for corn were raised from $1.20 to $1.35 per bushel; over a third would participate if they were allowed to pasture the diverted land; about a tenth would participate if the minimum acreage to be diverted were reduced from 20 to 15 percent; and about a seventh would participate

[14]This assumed that each farmer who participated in 1961 and also planned to participate in 1962 would divert the same number of acres into the program.

Fig. 3.—Percent of total corn base that farmers expected to divert into the 1962 Feed Grain Program at various payment rates, west-central Ohio, December 1961.[1]



[1]All farmers in the sample were asked if they would participate in the 1962 Feed Grain Program at various levels of diversion payment rates (relative to their 1961 rate). Their responses were weighted by their corn acreage to give the sample totals. The sample was then expended to give the area totals.

[2]Since many farms had corn bases of less than 100 acres, more than 40 percent of their corn base could be diverted. If every farmer diverted his maximum allowable acreage into the 1962 program about 68 percent of the 5-county area's corn base would be in the program.

if a long-term program were offered with the option of signing up each year (Table 9). Participation in the 1962 program would have been increased somewhat by making participation a requirement to obtain support prices for soybeans. Of those farmers not planning to participate in 1962, the 1961 participants would be more favorably influenced by incorporation of any of the proposed changes in the 1962 program.

TABLE 9.—Proportion of Farmers Not Planning to Participate in the 1962 Feed Grain Program Who Would Participate with Specified Changes in the Program, West-Central Ohio, December 1961.

Farmers not planning to participate in 1962	Farmers who would participate if --							
	Corn support price were raised from $1.20 to $1.35 per bushel	They were allowed to pasture the diverted land	Minimum acreage to be diverted were reduced to 15 percent	A 5-year program with option of signing up each year were offered	Participation was required to obtain support prices for soybeans at --			
					$2.30 per	$2.15 per	$2.00 per	$1.85 per
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Participants in 1961 -----	45	37	11	15	20	6	0	0
Nonparticipants in 1961 --	12	33	8	13	11	11	5	0
Total 1/ ----------	19	34	9	14	13	10	4	0

1/ 22 percent of the farmers who did not plan to participate in the 1962 Feed Grain Program were participators in the 1961 program, and the remaining 78 percent were nonparticipators in the 1961 program. The total was computed using these weights.

SUMMARY AND CONCLUSIONS

Many farmers believed that the feed grain program would profitably fit into their farming business. The sample indicated that the main advantages of the program to participators were: (1) It was more profitable than raising corn on many farms; (2) it allowed a profitable labor adjustment. The farmers who participated generally operated larger farms than did nonparticipants, but their labor supply was about the same. The participators apparently used the labor that was freed from raising corn to increase their livestock numbers. In most cases they could do this without buying corn; (3) the program was a type of crop insurance because it eliminated the risk of raising corn and yet gave a return per acre that was very competitive with raising and selling corn; (4) the program supplied farmers with working capital during the summer. Advance payments for diversion were free of interest; and (5) the feed grain program allowed farmers to retire cropland from production for a year. Many farmers planted the retired land to a legume to rebuild the soil fertility and structure. Farmers who participated generally had farmed their cropland more intensively in 1959 and 1960 than did nonparticipants.

Changes were made on both groups of farms from previous years to 1961. Farmers generally decreased their oat acreage and increased soybean acreage. Livestock numbers were increased on participant farms as was stated above, but were decreased on nonparticipant farms. Both groups increased the use of yield-improving practices in 1961, including higher analysis and higher rates of application of fertilizer.

The sample indicated that 24.3 percent of the total corn base in the 5-county area was diverted in 1961. However, the sample farmers expected to divert only 17.5 percent of their corn base in 1962—a 28 percent reduction in diverted land. At the time of the interview (December 1961) 29 percent of the 1961 participators planned to drop out of the feed grain program in 1962 while only 4 percent of the 1961 nonparticipators planned to sign up. Farmers planned to drop out because they thought (a) it was more profitable to raise corn, (b) there was too much "red tape" involved in signing up, or (c) they needed more feed for their increased livestock numbers.

More farmers would have signed up for the 1962 Feed Grain Program if changes had been made in the program. About a third of the farmers who did not plan to participate in 1962 would have participated had they been allowed to pasture the diverted land. Other changes such as raising the support price of corn, lowering the minimum

acreage to be diverted to 15 percent of the corn base, or tying the support price of soybeans to participation, also would have induced some farmers into the program.

The 1961 Feed Grain Program became effective on March 22, 1961, and farmers in west central Ohio planted corn in May. During the interim the county ASCS offices, the extension personnel, and farm leaders had the task of presenting a new program to the farmers. They did a remarkable job in the short time that was available, and apparently their educational program was successful because nearly half of the farmers in the sample area participated in the feed grain program. However, 13 percent of the farmers who did not participate in the program said that they did not sign up because they knew very little about the program. The sample interviewers had the impression that the actual percentage was much higher. About a third of the nonparticipating farmers either had a corn base that they considered too small to bother with, or else they were against the philosophy of government control in agriculture. It appeared that only about half of the nonparticipants had studied the program to some extent before making the decision to not participate.

The method of assignment of productivity indexes to farms by many county ASCS committees may result in some economic problems in future years. It was found that there was a bias toward the county average (index of 100). That is, a farm with a history of corn yields far below the county average would be assigned a productivity index somewhat below the county average but not as far below as it actually should have received. A farm with yields higher than the county average would receive a productivity index above the county average but below its actual average. One would expect that eventually this method would give relatively greater economic advantage to the less productive farm even though it did not show up in this study. This would tend to make a farm program, designed to reduce total production, less effective. It might also tend to retain less efficient managers in agriculture.

APPENDIX A

Procedure Used To Expand Sample

I. DATA NEEDED

	Example Champaign County
County ASCS Office statistics:	
1. Number of corn base "farms" in 1961 Feed Grain Program	985
2. Number of corn base farms not in program	869
Sample statistics:	
3. Number of ASCS definition "farms" per nonparticipant operator unit[1]	1.20
4. Number of ASCS definition "farms" containing diverted land per participant operator unit	1.25
5. Number of nonparticipating ASCS definition "farms" per participant operator unit[2]	.31

II. STEPS

A. Divide (1) by (4) to get the sample's estimate of the number of operator units in the program	$985 \div 1.25 = 788$
B. Multiply (5) by (A) to get the number of nonparticipating ASCS definition "farms" that are included in participant's operator units	$.31 \times 788 = 244$
C. Subtract (B) from (2) to get the number of ASCS definition "farms" that were operated by nonparticipants	$869 - 244 = 625$
D. Divide (C) by (3) to get the sample's estimate of the number of operator units that were not in the program	$625 \div 1.20 = 521$

[1] "Operator unit" is synonymous with the census definition of a farm.

[2] Many participating farmers operated several ASCS definition "farms" but it was not unusual for them to participate on only one "farm". The county ASCS office would list only the one "farm" as participating. Thus there were some ASCS definition "farms" listed as not being in the program although they were operated by participants.

Thus it was estimated, by expanding the sample, that in Champaign County 788 farms (census definition) participated in the 1961 Feed Grain Program and 521 farms that had a corn base did not participate. The 1959 Census of Agriculture listed 1,249 farms raising corn in Champaign County in 1959 compared with the sample's estimate of 1,309 in 1961. Comparable figures for the other counties and the area are shown in tables A-1 and A-2. The sample estimates of the population parameters (table A-2) can be compared with other estimates of the same parameters (table A-1) to give some indication of the sample's reliability.

TABLE A-1.—Farms Raising Corn in 1959, with Total and Diverted Acres of Corn Base, West-Central Ohio, 1961.

	Farms raising corn in 1959	Acres of corn base		
		Total	Diverted	Percent diverted
	Number	Acres	Acres	Percent
Champaign -----	1,249	73,427	23,248	32
Clark ----------	1,039	63,933	19,432	30
Darke ----------	2,789	116,150	23,623	20
Madison -------	959	81,498	19,823	24
Miami ----------	1,538	73,424	14,153	19
5-county area	7,574	408,432	100,279	25

Source: (a) Farms raising corn in 1959: U. S. Census of Agriculture: 1959. Vol. 1, Counties, Part 10 Ohio.

(b) Acres of corn base: "Ohio ASCS Newsletter," June 14, 1961.

TABLE A-2.—Estimates of Participant Farms in the 1961 Feed Grain Program and Nonparticipants with Corn Base, Total Acres Diverted and in Corn Base, and Corn Base Acres Per Farm, West-Central Ohio, 1961.

County	Farmers with corn base[1] --				Corn base acreage[2]		
	Not participating in program	Participating in program	Total	Percentage participating	Total	Diverted	Percentage diverted
	Number	Number	Number	Percent	Acres	Acres	Percent
Champaign	521	788	1,309	60	67,404	25,216	37
Clark	480	624	1,104	57	60,960	18,096	30
Darke	1,650	1,108	2,758	40	104,166	21,052	20
Madison	388	344	732	47	68,400	14,104	21
Miami	870	627	1,497	42	70,218	11,286	16
5-county area	3,909	3,491	7,400	47	371,148	89,754	24

County	Corn base acres per farm --		Diverted acres --	
	Nonparticipant	Participant	Per participating farm	Percentage of participating farms' corn base
	Acres	Acres	Acres	Percent
Champaign	30	84	32	38
Clark	50	62	29	47
Darke	27	45	19	42
Madison	68	116	41	35
Miami	44	49	18	37
5-county area	38	65	26	40

1/ See text for method of expansion of sample.

2/ Derived by multiplying the number of farms with corn base by diverted acres per farm.